

“The Tinamous, largely specialized into a kind of low gallinaceous *carinate* type, yet retain the same form of skull and face as the *Ratitæ*. *Thinocorus* also retains much that is dromæognathous in its skull, mixed with normal schizognathism: but superadded to these characters we find an intimate union of the broad vomer with the largely developed alinasal floor; a little more metamorphosis, and the palate would have corresponded with that of the Passerine birds.

“But in this bird, as in the Hemipod (*Turnix*) it is not in the structure of the vomer and its relation to the nasal labyrinth that we find all the Passerine characters. The face, generally, is rich in such modifications: I showed them in my former Part with regard to *Turnix*, and in this in the genus *Thinocorus*.

“In the marvellously specialized skulls of the Passerinae unlooked-for osseous centres often appear; these are often very uniform in certain families which are more or less allied.

“The first I may mention here are the “palato-maxillaries;” these are a pair of bones, separately representing the ingrowth of our upper jaw-bone which forms the “hard palate.” I find these in the following families, namely Tanagridæ, Brachypodidæ, Mniotiltidæ, Cœrebidæ, Cardinalidæ, Icteridæ, and Emberizidæ. In some families, besides lesser ossicles added to the vomer, one on each shoulder, the vomer is not merely composed of a right and left half, but each moiety is more or less broken up into two centres. Here we have repeated the tetramerous vomer (vomeres and ‘septo-maxillaries’) of the Snake and the Lizard. The families showing this structure more or less clearly are the Mniotiltidæ, Cœrebidæ, Vireonidæ, Muscipapidæ, and Saxicolidæ.

“With the exception of *Menura*, the South-American types are most generalized, low, and, I may say, ancient; next to them the Australian birds, and those from Malaisia and Central America; whilst the most highly specialized types belong to the northern hemisphere generally.

“Looked at from my particular morphological stand-point, facts like these seem to me to be well worth the pleasant labour I have spent in obtaining them.”

This paper will be published entire in the Society’s ‘Transactions.’

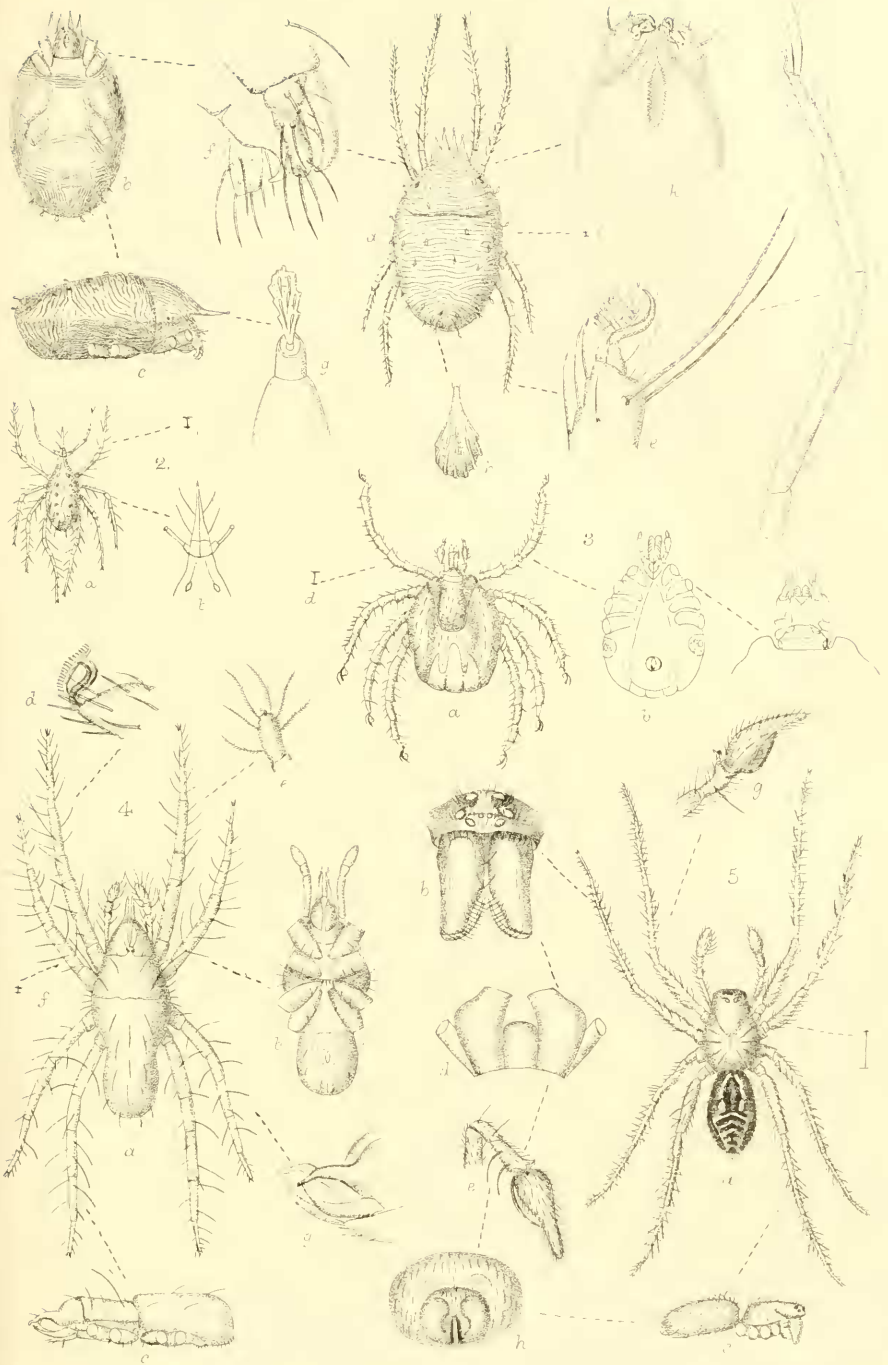
The following papers were read:—

1. On a new Order and some new Genera of Arachnida from Kerguelen’s Land. By the Rev. O. P. CAMBRIDGE, M.A., C.M.Z.S., Hon. Memb. New-Zealand Institute.

[Received January 15, 1876.]

(Plate XIX.)

The few examples of Arachnida found during the late Transit-of-Venus Expedition to Kerguelen’s Land, and kindly sent to me by the Rev. A. E. Eaton, I propose now to describe and figure. Almost



all of them are remarkable ; all appear to be new to science ; and one, indeed, at present seems to me incapable of inclusion in any hitherto recognized order of Arachnids. The whole collection consisted but of five species ; one of Araneidea and three of Acaridea, the fifth being that upon which I propose to found a new genus, family, and order. At first sight this delicate little Arachnid gave me the idea of a Chelifer deprived of its forcipated palpi ; but a subsequent examination with a stronger lens showed me that it possessed palpi of an entirely different character from those of the pseudo-Scorpiones ; and a final scrutiny under a still higher power led to the detection of the eyes : in the number and position of these there is a remarkable similarity to the Solpugidea, while there are not wanting some general indications of affinity to the Araneidea. Its small size and general appearance when alive would probably induce one to place it among the Acaridea ; but the structure of the mouth-parts, the distinct cephalothorax and abdomen, and especially the character of the eyes seemed to preclude this allocation. It is possible, however, that when the Acaridea have been more thoroughly worked out by some future arachnologist, the present anomalous little creature may become the type of a suborder, or perhaps only of a family of that order. Meanwhile in forming a distinct order for its reception, I desire to obtain the free criticism and opinion of arachnologists more conversant than myself with some obscure groups of Acaridea, as to its true systematic position.

Order ACARIDEA.

Fam. ACARIDES.

Gen. nov. TORYNOPHORA.

Body oval ; a slightly indented transverse line towards the fore part on the upperside appears to mark the junction of the cephalothorax and abdomen.

Mouth-parts almost soldered together, leaving only the short palpi and the extremities of the falces traceable.

Legs 8, slender, in 4 pairs (1-2 and 3-4 on each side), 5-jointed, and terminating with two somewhat S-curved claws springing from a small supernumerary or heel-joint.

Eyes four, in two pairs, one pair on either side of the caput.

Falces armed on the underside with serrated opposed edges.

Palpi short, strong, 4-jointed, with a single strong curved jaw-like claw springing from its base on the upperside.

TORYNOPHORA SERRATA, sp. n. (Plate XIX. fig. 1.)

Length $\frac{1}{4}$ line.

This minute Acarid is of an oval form, tolerably convex above, and of a uniform pale luteous colour. From the fore part of the cephalothorax four pointed processes project, each one terminating with a very small joint, from which springs a curious clavate or spoon-shaped bristle or tag ; a few with a somewhat similar tag are dispersed thinly over the upper surface of the body, which is closely wrinkled,

the wrinkles taking different but regular directions on the different parts of the body.

The *eyes* are very minute, in two pairs, one on either side of the caput; those of each pair are near together but not contiguous.

The *legs* are 5-jointed, slender, and not very long; they are armed with fine spines, bristles, and hairs, and terminate with two tarsal S-shaped claws, springing from a small terminal joint, and furnished beneath with some slender prominent clavate hairs. The legs are in pairs, the first and second, and third and fourth legs on each side having their basal joints respectively contiguous to each other, as in the genus *Trombidium*, and articulated to the fore half of the lower surface of the body.

The *palpi* are short, strong, 4-jointed; and to the upperside of the base of the digital joint is articulated a strong curved claw.

The *maxillæ*, *labium*, and *falces* coalesce and form a kind of suction apparatus, towards the fore part of which on the underside are two opposed curved saw-edged processes.

Several examples of this curious Acarid, found under stones, were contained in the Rev. A. E. Eaton's Kerguelen's-Land collection. Being so very minute and delicate, they had suffered considerably by being preserved in strong spirit.

Fam. BDELLIDES.

Gen. SCIRUS, C. Koch?

SCIRUS PALLIDUS, sp. n. (Plate XIX. fig. 2.)

Length $\frac{1}{2}$ a line.

As far as I could ascertain from the single example contained in the Kerguelen-Island collection, this small Acarid is an undescribed species of the genus *Scirus*. Its colour is a dull yellowish white; and there are a few obscure blackish markings in two parallel longitudinal lines along the upperside of the abdomen. The body and legs are furnished with a few longish pale semidiaphanous hairs. The *eyes* are in two pairs, those of each pair contiguous, and in the position indicated by the two small oval markings in figure 2*b*. The only example received was injured by the action of the spirit in which it had been preserved, so that the exact details of its structure could not be satisfactorily observed; in the general appearance, however, of the beak-like mouth-parts there seemed to be but little difference from the genus *Bdella* and others nearly allied.

Order ACARIDEA.

Fam. IXODIDES.

Gen. HYALOMMA, C. Koch.

HYALOMMA PUTA. (Plate XIX. fig. 3.)

Length $\frac{2}{3}$ line.

Body oval. *Cephalothorax* yellowish brown, strongly tinged with red on either side of its fore part and on the fore part of the caput.

Abdomen dark yellow-brown, and (as well as the cephalothorax) thinly clothed with short pale hairs; the hinder part of the abdomen is of a pale dull yellowish hue, and its margin is indented with four small elongate notches. On each side of the underpart, just behind the basal joints of the 4th pair of legs, is a roundish patch, whose surface appears to be covered with minute points, which may possibly be the plates of spiracular organs.

The *legs* are moderately long and tolerably strong, 7-jointed, the last or tarsal joint being very small; they are of a pale yellowish colour, marked underneath with patches of a bright shining orange red, and furnished with a few short hairs; each tarsus terminates with two curved diaphanous claws springing from a small claw-joint; and beneath them is an oval sucker-like pad.

The *palpi* are five-jointed (including the basal joints or maxillæ); these latter are of a reddish colour and soldered to the labium; the colour of the palpi is similar to that of the legs; the terminal (or digital) joint is short and small; the next to it (or radial) is large and tumid, the other two joints short. The length of the palpi slightly exceeds that of the *falces*.

The *falces* are porrected in the form of a beak, and are armed beneath with numerous sharp hooks or teeth directed backwards.

Several examples of this Acarid were found by the Rev. A. E. Eaton on a Penguin (*Pygosceles tæniatus*) in Kerguelen's Land.

Ordo nov. ? PÆCULOPHYSIDEA.

External Characters of the Order:—*Cephalothorax* and *abdomen* covered with a continuous epidermis of a rather slight texture, unsegmented, and united to each other throughout their whole breadth, the point of junction being clearly indicated by a transverse line or suture. *Palpi* filiform, and terminating with a single minute claw. *Legs* eight in number, their basal joints closely grouped together on the sternal surface of the cephalothorax, the tarsi terminate with two claws, between which is a slender pectinated style. *Falces* didactylous. *Maxillæ* coalescing at their base. *Labium* (properly so called) wanting. *Eyes* two.

Fam. PÆCULOPHYSIDES.

In its *general appearance* this curious little Arachnid seems to be a compound of the Spiders, Solpugids, Chelifers, and Acari. On its upperside it reminds one strongly of the Solpugidea, both in the massive *falces*, and its two eyes on a small tubercle at the fore extremity of the caput; its underside bears a strong resemblance in the maxillæ and palpi to the Araneidea; its profile resembles that of the pseudo-Scorpiones, while in its small size, continuous, delicate epidermis, and closely approximated thorax and abdomen it shows a strong likeness to the Acaridea.

Gen. nov. PÆCULOPHYSIS.

Eyes two, closely grouped on a small tubercle at the fore extremity of the caput, just between and above the base of the *falces*.

Falces massive, as long as the cephalothorax, two-clawed, the upper claw fixed, the lower movable, and both curved.

Maxillæ large, coalescing at their base, and produced at their inner extremity into a strong angularly pointed projection.

Labium none, and *sternum* none, properly so called, the basal joints of the legs being articulated to the inferior surface of the cephalothorax.

Abdomen longer than the cephalothorax. A small elongate oval aperture towards the hinder part of the underside is probably the genital opening, while a still more minute orifice beneath its extremity is probably the anal aperture.

Legs moderately long and tolerably strong; they are 6-jointed, furnished with long bristles, and terminating in two S-curved claws, beneath which is a longish, slender, slightly upturned style, plumose or finely pectinated along its underside.

Palpi 4-jointed, similar to the legs in armature; the terminal (or digital) joint ends with a small hooked claw; and the bristles or hairs on it are long and plumose.

PÆCILOPHYSIS KERGUELENENSIS, sp. n. (Plate XIX. fig. 4.)

Adult female. Length $\frac{1}{3}$ line.

The *cephalothorax* is of a somewhat quadrate form, narrower before than at its junction with the abdomen; it is moderately convex above, and has a few long pale hairs or slender bristles directed forwards on its upperside: its profile line is nearly level; and the colour of the cephalothorax and abdomen is pale yellow, the legs and other parts being of a whitish hue.

The *eyes* are small, but close together near the hinder part of a small roundish tubercle or eminence, at the middle of the fore extremity of the caput.

The *legs* are 6-jointed, rather long, tolerably strong, not greatly differing in length, their relative length being 1, 4, 2, 3; they are furnished with long pale bristles; and the tarsi, which are undivided and with two claws, are curved somewhat in the form of an S: beneath them is a largish bristle or style, pectinated or plumose on its inferior side. The joints do not differ greatly in length, the first two or basal ones being the longest, and the rest nearly equal.

The *palpi* are similar, in their general armature, to the legs. The digital joint is longer than the radial, and of an ovoid form; its hairs are plumose, and the single terminal claw is sharply hooked and minute.

The *falces* are as long as the cephalothorax, very massive at the base and didactyle, the lower claw being movable and opposed to the upper one; both claws are curved, but project in the same straight line and in the same plane as the cephalothorax, which the falces equal in length.

The *maxillæ* are long, their inner extremities considerably produced into an angularly pointed form, and extending close beneath the falces, to about two thirds of their length.

The *abdomen*, looked at in profile, is higher and more convex than

the cephalothorax, and about double its length; its fore extremity is conterminous in its breadth with the cephalothorax, but is constricted laterally near the middle, the hinder extremity being rounded and obtuse; its upper surface is furnished with a few long pale hairs or bristles.

Several examples of this minute but most interesting Arachnid were found under stones in Kerguelen's Land by Mr. Eaton. Unfortunately, from their extreme delicacy and small size, they had suffered severely from the action of the strong spirit in which they were immersed.

Order ARANEIDEA.

Fam. AGELENIDES.

Gen. nov. MYRO.

Cephalothorax oval, roundly truncated before, and moderately constricted on its lateral margins at the caput. Upper convexity moderate; profile-line slopes very gradually in a slightly curved line from the hinder slope to the ocular region; clypeus unusually narrow, almost obsolete. Spinners short, those of the inferior pair longest and strongest.

Eyes eight, unequal in size and forming a rather large and somewhat oval area, enclosed by two longitudinal curved rows of three eyes each; the curves directed from each other; within this area, and towards its fore part, are two minute eyes near together in a transverse line.

Legs not greatly different in relative length, which is 4, 1, 2, 3. Each tarsus terminates with three claws.

Maxillæ large, curved towards the labium, much and roundly protuberant on the outer sides towards their extremity, which is rather obliquely truncated; the palpi issue from unusually near their lower extremities.

Labium rather more than half the length of the maxillæ, very difficult to be seen clearly; but its form is apparently oblong, slightly rounded at the apex.

MYRO KERGUELENENSIS, sp. n. (Plate XIX. fig. 5.)

Adult male. Length nearly $2\frac{1}{2}$ lines.

The *cephalothorax* is of a yellow brown colour, the margins surrounded with a fine black line; the normal grooves and indentations are well marked, and suffused with dusky black, giving the thorax somewhat the appearance of radiating markings; the ocular region is furnished with some bristly black hairs; and some longer and finer ones are distributed along the central longitudinal line to the hinder slope.

The *eyes* are unequal in size and form a largish hexagonal area on the fore part of the caput close to its fore margin; they may be described either as in two longitudinal curved rows of three eyes each, with two minute ones in a transverse line towards the fore extremity of the enclosed area, or as four pairs, a hinder pair, two fore lateral pairs, and a fore central pair; those of the hinder pair are sepa-